



Complete Summary

GUIDELINE TITLE

Bone disease and growth in children.

BIBLIOGRAPHIC SOURCE(S)

Crompton C. Bone disease and growth in children. Nephrology 2005 Dec;10(S5):S222-3.

Crompton C. Bone disease and growth in children. Westmead NSW (Australia): CARI - Caring for Australasians with Renal Impairment; 2005 Jan. 3 p. [6 references]

GUIDELINE STATUS

This is the current release of the guideline.

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INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT
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SCOPE

DISEASE/CONDITION(S)

- Chronic kidney diseases
- End-stage kidney disease
- Secondary hyperparathyroidism
- Renal osteodystrophy

GUIDELINE CATEGORY

Management
Treatment

CLINICAL SPECIALTY

Family Practice
Nephrology
Pediatrics

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To review the available evidence regarding the effect of treating renal osteodystrophy on linear growth in children with chronic kidney disease or end-stage kidney disease

TARGET POPULATION

Children with chronic kidney disease or end-stage kidney disease

INTERVENTIONS AND PRACTICES CONSIDERED

Monitoring for and treatment of renal osteodystrophy with vitamin D and calcitriol or synthetic analogues was considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Renal osteodystrophy
- Linear growth
- Parathyroid hormone level

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Databases searched: MeSH terms and text words for kidney diseases were combined with MeSH terms and text words for bone disease then combined with the Cochrane highly sensitive search strategy for randomised controlled trials. The search was carried out in Medline (1996 – November Week 2 2003). The Cochrane Renal Group Trials Register was also searched for relevant trials not indexed in Medline.

Date of searches: 1 December 2003.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Level I: Evidence obtained from a systematic review of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from at least one properly designed RCT

Level III: Evidence obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method); comparative studies with concurrent controls and allocation not randomized, cohort studies, case-control studies, interrupted time series with a control group; comparative studies with historical control, two or more single arm studies, interrupted time series without a parallel control group

Level IV: Evidence obtained from case series, either post-test or pretest/post-test

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Recommendations of Others. Recommendations regarding bone disease and growth in children with kidney disease from the following groups were discussed: Kidney Disease Outcomes Quality Initiative, British Renal Association, Canadian Society of Nephrology, and European Best Practice Guidelines.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the levels of evidence (I–IV) can be found at the end of the "Major Recommendations" field.

Guidelines

No recommendations possible based on Level I or II evidence

Suggestions for Clinical Care

(Suggestions are based on Level III and IV evidence)

- Children with chronic kidney disease (CKD) or end-stage kidney disease (ESKD) should be monitored regularly for renal osteodystrophy, and treated with vitamin D if this develops.
- Calcitriol or synthetic analogues are suitable for use in children. Calcitriol liquid is available in Australia through the Small Activities Scheme (SAS), being imported from New Zealand. Alternatively, the fluid can be aspirated from capsules. The parathyroid hormone (PTH) level should be maintained under a level twice the upper limit of the normal range.

Although Level I or II evidence is not available, published clinical studies do not support the notion that correcting biochemically evident secondary hyperparathyroidism improves linear growth in children with CKD.

Definitions:

Levels of Evidence

Level I: Evidence obtained from a systematic review of all relevant randomized controlled trials (RCTs)

Level II: Evidence obtained from at least one properly designed RCT

Level III: Evidence obtained from well-designed pseudo-randomized controlled trials (alternate allocation or some other method); comparative studies with concurrent controls and allocation not randomized, cohort studies, case-control studies, interrupted time series with a control group; comparative studies with historical control, two or more single arm studies, interrupted time series without a parallel control group

Level IV: Evidence obtained from case series, either post-test or pretest/post-test

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

A potential benefit of treatment of renal osteodystrophy is an improvement in linear growth, although there are no clinical studies to support this.

POTENTIAL HARMS

Not stated

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2005 Dec

GUIDELINE DEVELOPER(S)

Caring for Australasians with Renal Impairment - Disease Specific Society

SOURCE(S) OF FUNDING

Industry-sponsored funding administered through Kidney Health Australia

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Author: Charles Crompton

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All guideline writers are required to fill out a declaration of conflict of interest.

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the [Caring for Australasians with Renal Impairment Web site](#).

Print copies: Available from Caring for Australasians with Renal Impairment, Locked Bag 4001, Centre for Kidney Research, Westmead NSW, Australia 2145

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- The CARI guidelines. A guide for writers. Caring for Australasians with Renal Impairment. 2006 May. 6 p.

Electronic copies: Available from the [Caring for Australasians with Renal Impairment \(CARI\) Web site](#).

PATIENT RESOURCES

None available

NGC STATUS

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Date Modified: 7/27/2009

